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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,731	08/31/2001	Susumu Takahashi	1186.1019	8415

21171 7590 03/28/2007

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EXAMINER	
RAO, SHRINIVAS H	
ART UNIT	PAPER NUMBER
2814	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/942,731	TAKAHASHI ET AL.	
	Examiner	Art Unit	
	Steven H. Rao	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9,10,12-28,41,42,45-53 and 56-61* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *9-10,12-28,41-42,45-53 & 56-61* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

Applicants' amendment filed on January 11, 2007 has been entered and forwarded to the examiner on January 30, 2007.

Therefore claims 9, 12-20,23-28, 41, 45-52 and 56-61 as amended by the amendment and claims 10, 21, 42 as previously recited are currently pending in the Application.

Claims 11,22,43 and 54 have been cancelled. Claims 29-40,43-44 and 54-55 were previously cancelled.

Claim Rejections – 35 USC Section 102/103

The following is a quotation of 35 U.S.C. 102/ 103(a) which forms the basis for all obviousness rejections set forth in this Office action.

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Further under provisions of MPEP 2113 (R-1) and approved by courts (CCPA) a rejection based alternately on either section 102 or 103 of the statute

is eminently fair and acceptable . In re brown, 459 F.2d. 531,535, 17 USQP685,688 (CCPA 1972) .

Claims 9-10,12-28,41-42,45-53 and 56-61 are rejected under 35 U.S.C. 103(a) as being obvious over Tanabe et al..(U.S. Patent No. 6,1 18, 586 herein after Tanabe) previously applied and further in view of Japanese Utility Model No. 258847 (LGZ Landis, herein after Landis) (for Applicants' convenience U.S Patent Pub. No. 2003/0151784, wherein English translation of relevant portions of Landis is enclosed e.g. para 0007) Ogawa et al. (U.S. Patent No. 6,088,076, herein after Ogawa) all previously applied and further in view of Jp 2001 116908 (Toppan printing Co. Ltd, herein after Toppan, also cited by applicants' in Their IDS of December 04, 2006 quoting the European search report).

With respect to claims 9, 20 and 52 Tanabe describes a display device which comprises an array of pixels arranged in a matrix and forms an image to be displayed comprising an array of diffraction grating cells arranged in a matrix, (co1.2 lines 60-65, etc.) each cell comprising blazed type or binary type curved gratings., having the same profile and arranged in parallel (Tanabe figures 2/3, etc. and Col. 10 lines 63 tO 67). (col. 5 line 30-34). (LCD layer and display (cl .9) col.2 lines 56-62 and Col. 10 lines 63 to 67).

The limitation of wherein each side of each diffraction grating cell measures

between about 5um to about 300 um is not specifically describes by Tanabe. However Landis (Japanese Utility patent No. 258847)and (2003/151784, para 0007) describes a diffraction grating pattern of 0 to 300 um to provide micro-characters having desired properties including anti-counterfeiting means used in notes credit cards etc.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Landis (Japanese Patent No. 258847's) a diffraction grating pattern of 0 to 300 um(i.e wherein each side of each diffraction grating cell measures between about 5um to about 300 um) in Tanabe's device. The motivation to make the above combination is to provide micro-characters having desired properties including anti-counterfeiting means used in notes credit cards etc. (JP '847 patent).

The limitation, "wherein said diffraction grating cells are located at positions corresponding to the pixels. " is not specifically mentioned by the above applied Tanabe or Landis references.

However, Ogawa, a patent from the same field of endeavor, describes in col .4 lines 12 to 25 etc. wherein said diffraction grating cells are located at positions corresponding to the pixels to provide LCD which prevents color intensification and which accurately regenerates white, thus ensuring the display of good-quality color images with excellent color images with an

excellent color balance.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Ogawa's diffraction grating cells are located at positions corresponding to the pixels, in Tanabe and Landis device The motivation to make this combination is to provide LCD which prevents color intensification and which accurately regenerates white, thus ensuring the display of good-quality color images with excellent color images with an excellent color balance. (Ogawa col.2 lines 15 to 25).

The presently newly added limitation, "and being formed by arranging substantially identical curved lines in the form of a sector of a circle, the curved lines being separated at regular intervals, the interval having a horizontal component and a vertical component," is/are taken to be product by process limitation/s and are non-limiting. A product by process claim is directed to the product per se, no matter how actually made see in re Fessman, 180 USPQ 324, 326 (CCPA 1974) ; In re Marosi et al., 218 USPQ 289,292 (Fed. Cir. 1983); and particularly In re Thrope, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product "gleaned " from the process steps , which must be determined in a " product by process" claim, and not the patentability of the process. See also MPEP 2113 which further states an old or obvious product produced by a new method is not a patentable product, whether claimed in " product by process" claims or not .

It is noted that even if these limitations are recited in the proper format the limitations, "and being formed by arranging substantially identical curved lines in the form of a sector of a circle, the curved lines being separated at regular intervals, the interval having a horizontal component and a vertical component," is taught by European Search report (dated 10/12/206) included by Applicants' in their IDS filed December 04, 2006, wherein on pages 3 (especially paragraph 4.1 to 4.2) the above recited features were found to lack novelty and inventive step over therein applied reference D1-(JP 2001 116908 A Toppan Printing Co. Ltd of April 27, 2001).

With respect to claims 10, 21,42,53 Tanabe describes the optical film according to claim 9, wherein said gratings of different grating cells contain different profiles. (col. 5 lines 34-48 and Col. 10 lines 63 to 67).

With respect to claims 12, 23 Tanabe describes the optical film according to one of claims 9 wherein said gratings of each grating cells include at least two grating pitches (col. 7 lines 17-30 and Col. 10 lines 63 to 67).

With respect to claims 13, 24, 45,56 Tanabe describes the optical film according to claim 9, wherein an angle of a slope of the gratings of different rating cells is uniform. (Tanabe figure 2 and Col. 10 lines 63 to 67).

With respect to claims 14, 46 Tanabe describes the optical film according to claim 9 wherein a surface of said diffraction grating cells of each of the grating

cells is provided with a reflection layer. (Figure 1 ,9 and Col. 10 lines 63 to 67).

With respect to claims 15, 47 Tanabe describes the optical film according to claim 9, wherein each of the gratings of each of the grating cells has a gentle slope and a steep slope in a cross section and a surface of the gentle slope is provided with a reflection layer. (figures 2 and 3, .and see above rejections and Col. 10 lines 63 to 67,see rejections under claims 19, 51 also).

With respect to claims 16, 48 and 57 Tanabe describes the optical film according to claims 9, wherein fine rectangular or elliptic projections or recesses are formed on a surface of said diffraction grating cells with a short axis thereof agreeing with a direction of juxtaposition of said gratings. (Tanabe col. 16 lines 23-35, and Tenantable figs. 2,3 and Col. 10 lines 63 to 67).

With respect to claims 17, 49, 58 Tanabe describes the display device according to one of claims 9 to 1 1, wherein said liquid crystal display layer comprises an array of pixels arranged in a matrix', and said diffraction grating cells and said

array of pixels show a one-to-one correspondence. (Tanabe example 8, co1.16 lines 23-35 and Col. 10 lines 63 to 67).

With respect to claim 18 Tanabe describes the display device according to one of claims 9 to 1 1 , wherein said liquid crystal display layer comprises

array of pixels (Tanabe col. 6 line 62 to col. 7 line 6 and Col. 10 lines 63 to67). With respect to claims 27and 59 Tanabe describes LCD layer having an array of pixels arranged in a matrix, and a pitch of arrangement of said array o{ diffraction grating cells is integer times of a pitch of arrangement of said pixels or vice versa. (Tanabe col. 16 line 36 to 44 and Col. 10 lines 63 to 67). With respect to claim 19, 51 Tanabe describes the display device according to claims 9 to 11 , wherein the grating has a gentle slope and a steep slope in a cross section and the gentle slope is directed to above a display screen of said display device. (Tanabe figures 2 to 6 etc. and Col. 10 lines 63 to 67). With respect to claim 41 Tanabe describes a display device comprising : a liquid crystal display layer which comprises an array of pixels arranged in a matrix and which forms an image to be displayed', and a light reflecting optical film which is arranged on a rear surface of the liquid crystal display layer (figures 4,5 etc.) and comprises an array of diffraction grating cells arranged in a matrix, each cell comprising curved gratings, having same profile and arranged in parallel (col. 5 line 30-34). (LCD layer and display (cl.9) col .2 lines 56-62 and Col. 10 lines 63 to 67)wherein said gratings of each of the grating cells include at least two grating pitches. (col. 10 lines 29 to 39 and Col. 10 lines 63 to 67) and wherein each side of each diffraction grating cell measures between about 5um to about 300 um(rejected for reason set out

under claims 1 and 20 above).

With respect to claim 50 Tanabe describes the display device according to one of claims 41 to 43, wherein said liquid crystal display layer comprises an array of pixels arranged in a matrix, and a pitch of arrangement, of said diffraction grating cells is integer times of a pitch of arrangement of said pixels or vice versa. (col. 10 lines 29 to 39 and Col. 10 lines 63 to 67) of cross section and the gentle slope is directed to above a display screen of said display.

With respect to claim 60 Tanabe describes the display device according to one claims 52 to 54, wherein the grating has a gentle slop and a steep slope in a device. (Tanabe figure 6, col. 6 last line to col. 7 lines 1-2).

With respect to claim 61, Tanabe describes a display device including a liquid crystal display layer (Tanabe co1.2 line 54) which comprises an (sic any) array of pixels arranged in a matrix and forma an image to be displayed, a plurality of drive electrodes in proximity to the liquid crystal display layer (assuming arguendo no new matter exists) and a light reflecting optical film including a plurality of diffraction grating cells arranged in a matrix, each of the diffraction grating cells including at least one of a blazed type and a binary type grating, having the same profile and arranged in parallel (Tanabe figures 2/3, etc. and Col. 10 lines 63 tO 67). (col. 5 line 30-34). (LCD layer and

display (cl.9) col.2 lines 56-62 and Col. 10 lines 63 to 67) wherein the drive electrodes from the light reflecting optical film and wherein each of the drive electrodes includes one of the diffraction grating cells and wherein the drive electrodes form the light reflecting optical film, and wherein each of the drive electrodes includes one of the diffraction grating cells, wherein each side of each diffraction grating cell measures between about 5 pm and about 300 pm and wherein said diffraction grating cells are located at positions corresponding to the pixels. (rejected for reasons set out under claims 9, 20 etc.)

Response to Arguments

Applicant's arguments filed January 30, 2007 have been fully considered but they are not persuasive for the following reasons :

Applicants' contend that their newly added limitation :

"and [is] formed by arranging substantially identical curved lines in the form of a sector of a circle, the curved lines being separated at regular intervals, the interval having a horizontal component and a vertical component,"

is not taught by the applied Tanabe, Landis and Ogawa references is not persuasive because

(a) As shown above Applicants' present recitation is in a product by process form / limitation/s in a product claim and these limitations cannot be given patentable weight.

(b) Assuming arguendo that Applicants' have recited these limitations in proper format , as stated in Applicants' IDS of December 04, 2006 (* citing the European

Search report of Oct. 12, 2006) these limitations were found to lack novelty and inventive step in the European Search Report.

Therefore all independent claims 9, 20,41,52 and 61 are Finally rejected .

Applicants contended that dependent claims 10,12-19,21,23-28, 42 45-51,53 and 58-60 were allegedly allowable because of their dependency upon allegedly allowable independent claims 9,20,41,52 and 61.

However as shown above all independent claims 9, 20,41,52 and 61 are not allowable and Finally rejected therefore dependent claims 10,12-19,21,23-28, 42 45-51,53 and 58-60 are not allowable and Finally rejected.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven H. Rao whose telephone number is (571) 272-1718. The examiner can normally be reached on 8.30-5.30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on 571-272-1714. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven H. Rao

Patent Examiner

March 19, 2007.

HOWARD WEISS
PRIMARY EXAMINER